

Figure 29 provides a schematic drawing of a target nucleic acid with an invader oligonucleotide and a probe oligonucleotide annealed to the target.

Figure 30 provides a schematic showing the S-60 hairpin oligonucleotide (SEQ ID NO:40) with the annealed P-15 oligonucleotide (SEQ ID NO:41).

Figure 31 is an autoradiogram of a gel showing the results of a cleavage reaction run using the S-60 hairpin in the presence or absence of the P-15 oligonucleotide.

Figure 32 provides a schematic showing three different arrangements of target-specific oligonucleotides and their hybridization to a target nucleic acid which also has a probe oligonucleotide annealed thereto.

Figure 33 is the image generated by a fluorescence imager showing that the presence of an invader oligonucleotide causes a shift in the site of cleavage in a probe/target duplex.

Figure 34 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run using the three target-specific oligonucleotides diagrammed in Figure 32.

Figure 35 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence or absence of non-target nucleic acid molecules.

Figure 36 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of decreasing amounts of target nucleic acid.

Figure 37 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence or absence of saliva extract using various thermostable 5' nucleases or DNA polymerases.

Figure 38 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run using various 5' nucleases.

Figure 39 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run using two target nucleic acids which differ by a single basepair at two different reaction temperatures.

Figure 40A provides a schematic showing the effect of elevated temperature upon the annealing and cleavage of a probe oligonucleotide along a target nucleic acid wherein the probe contains a region of noncomplementarity with the target.

Figure 40B provides a schematic showing the effect of adding an upstream oligonucleotide upon the annealing and cleavage of a probe oligonucleotide along a target nucleic acid wherein the probe contains a region of noncomplementarity with the target.

Figure 41 provides a schematic showing an arrangement of a target-specific invader oligonucleotide (SEQ ID NO:50) and a target-specific probe oligonucleotide (SEQ ID NO:49) bearing a 5' Cy3 label along a target nucleic acid (SEQ ID NO:42).

Figure 42 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing concentrations of KCl.

Figure 43 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing concentrations of NaCl.

Figure 44 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing concentrations of LiCl.

Figure 45 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing concentrations of KGlu.

Figure 46 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing concentrations of  $MnCl_2$  or  $MgCl_2$ .

Figure 47 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing concentrations of CTAB.

Figure 48 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing concentrations of PEG.

Figure 49 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of glycerol, Tween-20 and/or Nonidet-P40.

Figure 50 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing concentrations of gelatin in reactions containing or lacking KCl or LiCl.

Figure 51 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run in the presence of increasing amounts of genomic DNA or tRNA.

Figure 52 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run use a HCV RNA target.

Figure 53 is the image generated by a fluorescence imager showing the products of invader-directed cleavage assays run using a HCV RNA target and demonstrate the stability of RNA targets under invader-directed cleavage assay conditions.

Figure 54 is the image generated by a fluorescence imager showing the sensitivity of detection and the stability of RNA in invader-directed cleavage assays run using a HCV RNA target.

Figure 55 is the image generated by a fluorescence imager showing thermal degradation of oligonucleotides containing or lacking a 3' phosphate group.

Figure 56 depicts the structure of amino-modified oligonucleotides 70 and 74.

Figure 57 depicts the structure of amino-modified oligonucleotide 75

Figure 58 depicts the structure of amino-modified oligonucleotide 76.

Figure 59 is the image generated by a fluorescence imager scan of an IEF gel showing the migration of substrates 70, 70dp, 74, 74dp, 75, 75dp, 76 and 76dp.